CETAPS CENTRE FOR ENGLISH, TRANSLATION AND ANGLO-PORTUGUESE STUDIES

WORKING CLIL

Perspectives of students for orienting teaching practices in the integration between Science and English at Portuguese middle school level

Valentina Piacentini (valentina.piacentini@ua.pt); Ana Raquel Simões; Rui Marques Vieira
CIDTFF, University of Aveiro, Portugal

Introduction

Research on the integration of Science education and English learning as well as on the Language focus of Science education is highly relevant, for scientific literacy and language proficiency. Because of the additional language, CLIL represents a possible educational approach for researchers to "weigh" the importance of a language-aware teaching (Wolff, 2012), here, of Science.

The main purpose of our study is to understand what "orientations" for teacher practices in integrating Science with English emerge from participants in a CLIL-type experience, in order to improve the learning of both Science and English (Grandinetti, Langellotti, & Ting, 2013). The present work shows the relationship of students with the "integration project" approach, as well as advantages/disadvantages they identify in learning a subject with/in a foreign language.

Context, participants and methods

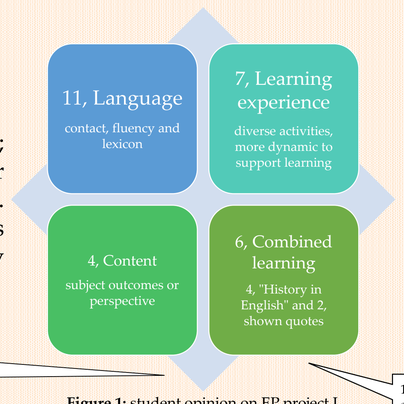
Case study on **"English Plus" (EP) project** – a **CLIL-type** and bottom-up teacher initiative – implemented in one state Portuguese middle school, integrating the use/learning of English with History (Simões et al., 2013) and Science (Piacentini, Simões, & Vieira, 2016).
Participant students had, weekly, 45' of theoretical specific subject with English (co-teaching), 45' of "normally run" subject (single-teaching) and 45' of English on socio-cultural subject-related topics:
A. 2010/2013, **EP in History (I)**, **high school** students in 2015-2016 (1, Humanities; 4, Economics; 6, Science);
B. 2014/2016, **EP in Science (II)**, **middle school** students at first and second year in EP (7th and 8th grades).

Data collected (in Portuguese) through semi-structured
questionnaire (2015) to B. students (**N = 96**): Q18.1 and Q20/Q21;
interview (2016) to A. students (**N = 11**): Q1 and Q4.
Qualitative content analysis of open-ended and transcribed answers.

Discussion of Results

A. Learning through EP-History for former students

Perspectives on subjects involved and the approach (Q1)
Language improvement through the programme is unquestioned; furthermore, a deep idea of what Integrated Learning may mean, also for the learning of both English and History, exists in some students (Fig. 1). It becomes clear how a different learning experience – activities/methods offered by this CLIL-type project – is important for developing quality teaching that motivates and supports learners.



12i7: *[…] focus not just on English but also on History […] using the language like that […] not only the learning of terms […] ahm we start internalizing the language and using it more easily […] giving to the subject a more original shape […]*

12i10: *[…] it helped a lot with the language ahm we did not learn just English in the subject of English […] basically numbers verbs […] we learn about a different History […] we don't really have this range in the subject of History […]*

Figure 1: student opinion on EP project I and interesting quotes

Perspectives on History and English teachers (Q4)
Regarding features of the project lessons and the role of teachers involved in them (Fig. 2), interesting and interactive classes have been (co-planned and) performed, capturing students' attention and making them focused on learning, and effectively supported by explicit inputs. More specifically about the History teacher, her open-mindedness in learning/developing new teaching strategies and clear verbal support has played a pivotal role for students, also in single-teaching.

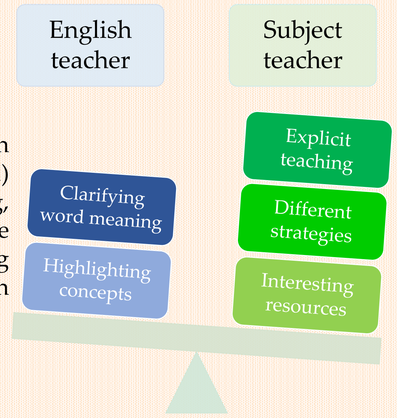


Figure 2: roles of teachers in EP classes (with two teachers or just one)

B. Learning through EP-Science for current students

The project, its importance (Q18.1) and advantages/difficulties (Q20/21)
As Fig. 3 shows, "language learning" is the main advantage for the project students, especially for ones having already one year's experience (not shown), in being a process/ability not difficult to self-assess. Same level of importance is attributed to "future studies and job", related more by the older students (not shown). The "combined learning" category is discussed below.

As for difficulties (not shown), students infrequently refer to the language understanding as an obstacle; in fact, more than 50% do not see any disadvantage, with the exception of consequent extra work (around 18%) and negative effects on the assessment (8%).

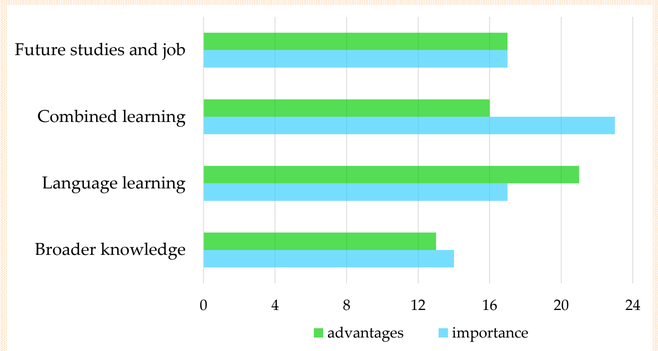


Figure 3: EP project II and its importance/advantages. Same codes from answers to Q18.1 and Q20; total not equal to 96 (44+52), some answers having been rejected.

The combination of Science and English learnings
For the most important reason, student answers have been split in sub-answers to identify aspects related to Science and English, as coded in Fig. 4. The distribution basically covers all achievements/competences for younger students, whereas it is more focused for older ones, who consider very important the vocabulary and knowledge enhancements, the English practice being also a clear advantage; students who know little the project effects could not see any advantage for vocabulary.

To understand how students combine these aspects as a perspective of Integrated Learning, merged data are drawn in Fig. 5. Students believe the CLIL-type EP provision does imply the learning of both Science and English. In the "Science in English" plus in the acquisition of Science terms in English (partially, see Vocabulary), the idea that CLIL could be "learning one subject just speaking another language" is however also very present.

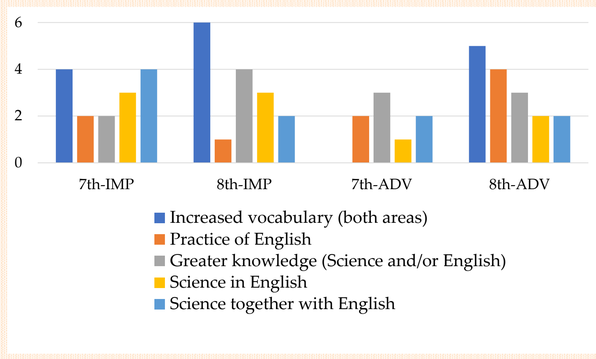


Figure 4: learning aspects including Science and English (absolute occurrences of sub-codes are plotted)

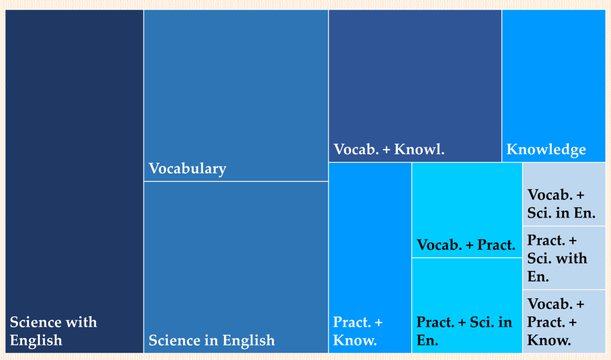


Figure 5: treemap showing possible associations originating "combined learning"

Considerations

- Student participation in the "English Plus" project means definitively a **demanding work**, as well as for teachers in planning and implementing classes.
- **English enhancement** is a fact for EP former and current learners; CLIL has actually arisen as a strategy for language promotion.
- Worth considering their **position with respect to the approach of Integrated Learning**: language is learnt in more authentic settings and the subject education is improved, confirming Grandinetti, Langellotti, and Ting (2013).
- Students' voices contribute to understand **conceptions/expectations of the Content and Language integration** through diverse combinations (to later understand, in terms of the Coyle's "triptych languages"): "learning Science together with English" but also "Science merely translated into English", increasing Science lexicon and English vocabulary, etc.
- For ex-students the **exposure to a different teaching method** has been the real point, often detected in CLIL environments (Marsh, 2012), mainly due to the additional language.
- (Subject) **teacher's attitude** thus becomes aware of language in general (Blanchard, Masserot, & Holbrook, 2014; Wolff, 2012), hence open to change the support/scaffold of "new" learning conditions. **Language focus of Science education** through CLIL has actually been described in literature (Piacentini, Simões, & Vieira, 2017).
- Significant difficulties with this CLIL-type approach do not emerge here, despite EP students' **suggestions to teachers for improving** lessons, in terms of content scaffolding and representation (Piacentini, Simões, & Vieira, 2016). Learner perspective can orient the **teacher reflection** on meaningful and effective strategies and the teaching in the **CLIL practice** specific settings.
- Further research will develop a broader **characterization of participant teachers**, learning at different times of the implementation and through student feedback.

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